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ABSTRACT

One of a set of seven instructional materials designed for competency-based vocational education administrator education, this module focuses on assisting the learner in becoming involved in that phase of goal development which aligns state and national educational standards with local concerns. (The process of goal development is the basis for the seven module objectives.) Following introductory material discussing the organization of the module, six learning experiences are presented, each directed toward helping the learner accomplish one of the module objectives. The experiences are titled Resources for Developing Program Goals and Objectives, Educational Standards for Vocational School Programs, Strategies for Developing Program Goals and Objectives, Excerpts from a State Plan for Vocational Education, Aligning Goals and Objectives with Local Concerns, and Analyzing Appropriate Criterion Measures for Program Evaluation. Each experience includes an explanation of the activity, a self-check, and model answers to serve as feedback. The module concludes with module assessment and administrator performance forms designed to test the exit competence of the learner. (SH)

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ED145125

FORMULATING GOALS AND OBJECTIVES FOR VOCATIONAL EDUCATION PROGRAMS

Competency-Based Administrator Education Module

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U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Competency-Based Administrator Education Project
Division of Vocational and Technical Education
Virginia Polytechnic Institute and State University
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INTRODUCTION

Systematic approaches to instruction are essential if accountability is to be assured. Since accountability is of major concern in vocational-technical education, most local vocational administrators desire to facilitate systematic instructional approaches in their programs. Correspondingly, relevant goals and objectives are emphasized as the foundation for systematic instruction.

The vocational administrator is most directly involved in that phase of goal development which aligns state and national educational standards with local concerns and with what is actually taught each day in the classroom and laboratory. Consequently, the goal development process receives major attention in this module. You will have the opportunity to develop expertise in strategies for involving concerned personnel in the goal development process.

Measurement is also considered in relation to the attainment of goals and instructional objectives since a means must be provided to ascertain the extent to which instruction has been effective. In this manner, a sound foundation is established for continuous examination and revision so that instruction may be kept relevant.

MODULE STRUCTURE AND USE

ORGANIZATION

This instructional module is a set of experiences intended to facilitate your demonstration of the objectives detailed below. An introduction and six sequential learning experiences are contained in this module. An overview precedes the first learning experience to provide at a glance a brief description of what the learning experience entails.

Two types of objectives form the basis of the learning experience: a terminal objective and an enabling objective. The enabling objective is designed to help you achieve the terminal objective. The learning experience has activities to help you accomplish the objective, and by use of the feedback devices provided, you should be able to determine if you have reached each objective. The first learning experience is designed to provide you with the needed background information. The second through sixth learning experiences give you an opportunity to apply that information in practical situations. The final assessment is designed to allow you to devise strategies for developing program goals and instructional objectives in a case study situation. It requires repeating all previous learning experiences in an application to a new situation representing a school setting.

OBJECTIVES

This module includes seven objectives:

Terminal Objective: Facilitate the development of program goals, instructional objectives, and criterion measures for vocational education programs.

Your competence will be assessed by your response person using the standards contained in the "Facilitation of Goals and Objectives Assessment Form," p. 95.

Enabling Objective #1: Identify outside resources, (i.e., community occupational competencies and entry standards, community needs assessment, advisory committee, consultants, brochures, and course outlines from other schools) needed to develop program goals and objectives to support desired program outcomes (Learning Experience I).

Enabling Objective #2: Demonstrate knowledge of educational standards for vocational school programs (i.e., Standards of Quality and State Plan for Vocational Education) and concerns for facilitating development of goals and objectives for vocational programs. (Learning Experience II).

Enabling Objective #3: In writing, explain strategies for involving staff in the development of goals and objectives.

Take into account unique characteristics of subgroups (Learning Experience III).

Enabling Objective #4: Determine whether goals and objectives meet State Department requirements for a program and identify any areas where goals and objectives appear deficient (Learning Experience IV).

Enabling Objective #5: Determine the alignment of goals and objectives revised in Learning Experience IV with local concerns compiled from a community occupational survey, advisory committee minutes, and a consultant's report. Include instructions for revision of the goals and objectives by the appropriate vocational teachers. (Learning Experience V).

Enabling Objective #6: Analyze appropriate kinds of criterion measures to be used by staff in evaluating achievement of given sets of program goals and instructional objectives (Learning Experience VI).

PROCEDURE

After reading the "Introduction," p. 1, and the objectives listed above, you should be able to determine how much of this module you will need to complete in order to be competent in formulating goals and objectives for vocational education programs.

* If you already have the necessary background knowledge and practice required for proficiency in formulating goals and objectives, you may not need to complete Learning Experiences I-VI.

* Instead, with the approval of your resource person, you may choose to proceed directly to the Module Assessment.

* You may wish to skim the overview for Learning Experiences I-VI and to skim the final learning experience. These pages will provide you with more specific information for deciding which experiences you need to complete.

RESOURCES

Listed below are the outside resources which supplement those contained within the module. Check with your resource person to determine the availability and the location of the resources.

REQUIRED RESOURCES

Resource Person

* Your resource person must be contacted to assess your performance in facilitating development of goals and objectives in a case study situation representing a school setting.

References

* The educational standards of quality for your state and state curriculum guide in the various vocational service areas will be useful in completing the activities of this module.

OPTIONAL RESOURCES

Resource Person

* Your resource person may be contacted if you have any difficulty with directions, or in assessing your progress at any time.

Resource Person and/or Peers (e.g., Other Students)

* If you wish to discuss the information contained in the reading or to compare your written responses through discussion, you can set up a seminar-type meeting with peers and/or your resource person (Learning Experience I).

TERMINOLOGY

Instructional System...usually includes components such as:

1. Occupational analysis
2. Goals
3. Objectives
4. Instructional delivery
5. Evaluation and Feedback
6. Revision

Program Goals are general, student-oriented behavioral statements which take the mastery of two or more performance objectives to demonstrate but do not refer to conditions or criteria.[1]

Performance Objectives are statements of educational intent that indicate the behavior a student will demonstrate upon successful completion of a learning experience. It contains reference to conditions, performance, and criteria.[2]

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[1]Patricia Serayadarian, "Module 2, Performance Objectives," in The Development and Implementation of an In-Service Program on the Use of Performance-Based Instruction in Michigan's Vocational Education Programs (Detroit: Institute for the Research and Development of Competency-Based Teacher Education Programs, Wayne State University, 1975), p. A-3.

[2]Ibid.

LEARNING EXPERIENCE I

ENABLING OBJECTIVE

Identify outside resources, (i.e., community occupational competencies and entry standards, community needs assessment, advisory committee, consultants, brochures, and course outlines from other schools) needed to develop program goals and objectives to support desired program outcomes.

Read Read the "Information Sheet," p. 6-19.

Optional Activity Interview a person responsible for determining vocational program goals and objectives to learn about procedures for compiling and writing the needed material.

Feedback Demonstrate knowledge of outside resources needed in developing goals of vocational programs by completing the "Self-Check," p. 20.

Evaluate your knowledge by comparing your completed "Self-Check" with the "Model Answers," pp. 21-22.

INFORMATION SHEET

RESOURCES FOR DEVELOPING PROGRAM GOALS AND OBJECTIVES

The local vocational director often works with the school's chief instructional officer to update program goals and objectives based on identified needs for the vocational and technical division. The vocational director first must identify outside resource materials which will provide useful information about desired program outcomes. Remember that the justification for vocational and technical education is extrinsic rather than intrinsic. We must look outside the school program to identify needs to which it must respond.

Many outside resources are of value to the person responsible for determining vocational program goals and objectives. One of these resources is a local occupational survey which can yield pertinent information for designing vocational programs. Included for consideration is an excerpt from a report of a community occupational survey pointing up the need for workers in various occupations (p. 7). Additional outside resource materials include minutes from a community vocational advisory committee on pp. 12-13 and a summary from the recent final report of a consultant (pp. 9-11). Samples of brochures and course outlines of Instructional Block objectives from other schools include specific program goals and objectives which were derived using occupational blocks for instruction (pp. 14-19).

Each of the information sources is useful for identifying needs as a basis for developing program goals and objectives to promote desired program outcomes. The program goals and objectives which are developed establish priorities for instructional decision making. The Self-Check on p. 20 requires identification of problems for consideration in developing goals and objectives.

EXHIBIT A - REPORT OF COMMUNITY OCCUPATIONAL SURVEY
FOR MONTGOMERY COUNTY, 1976-80, SELECTED OCCUPATIONS

Montgomery County Job Opportunities 1976 to 1980

Occupational Category	Net demand from industry growth	Replacement needs from deaths and retirements	Total new jobs from these sources (3 years)	Approximate job openings for 1978 (Job Demand)
Secretary, other	3,283	3,811	7,094	2,364
Typist	1,074	1,498	2,572	857
Stenographer	54	101	155	52

Montgomery County Estimated Labor Market Impact 1978

Occupational Category	Public High School	Community College	Adult Voc. Ed.	Private Post-secondary	Total 1978 (Program Supply)
Secretary, other	162	227	200	----	589
Typist	124	415	---	----	539
Stenographer	1,076	---	45	162	1,103

Montgomery County Net Training Need

Occupational Category	Job Demand 1978	Program Supply 1978	Net Training Need 1978
Secretary, other	2,364	589	1,775
Typist	857	539	318
Stenographer	52	1,103	- 1,051

[1]Adapted from Greg Ohanneson and Glen Vaughan, "The Collection and Use of Vocational Program Information," American Vocational Journal, May 1975, p. 37.

EXHIBIT B

RESEARCH ASSOCIATES

June 1, 197_

Mr. A. J. Hinkle, Director
Vocational and Technical Education
Montgomery County School District
Montgomery, Virginia 57821

Dear Mr. Hinkle:

This is to serve as a letter of transmittal of our research report entitled, "Current Vocational-Technical Training Needs of Montgomery County." This research project was undertaken by our organization as a result of contracts of agreement with Montgomery County School District. As you will note in the attached summary, each major conclusion of our study is listed with accompanying notation as to whether the recommendation should receive (1) immediate action, (2) long-range action, or (3) further consideration. Data to make these judgments were obtained from State Department of Education Statistical Reports, questionnaire studies involving local employers and citizens, open meetings with students, teachers, and parents, and structured interviews with school district administrators and State Department supervisors for this region. I believe the accompanying table presenting the results of this study is self-explanatory.

I would like to thank you for this opportunity to be of service to vocational education in Montgomery County.

Very truly yours,

Marvin E. Fink

Marvin E. Fink
Research Director

MF:sg

Enclosure

EXHIBIT B (continued)

SUMMARY TABLE

Conclusions:	Immediate Action	Long-Range Action	For Further Consideration
1. A data collection plan to serve current and recurring needs should be established for purposes of planning and evaluation.	X	____	____
2. A job placement and follow-up service should be established for vocational education graduates.	X	____	____
3. Articulation of programs between the junior high school and the high school, between the high school and post-secondary institutions, and between vocational and academic high school programs should be researched and improved so that more students will be able to increase their job breadth and depth as they move from one level of formal schooling to another.	____	X	____
4. The community advisory council on vocational education should be adequately staffed in accordance with guidelines established by the State Division of Vocational Education and provided access to school facilities and resources so as to render more effective service in annual and long-range planning and in annual program evaluation.	X	____	____
5. The development of a positive image of vocational education in this community is hampered by outdated perspectives of vocational and technical education, harmful opinions about work, and unrealistic attitudes toward collegiate			

	Immediate Action	Long-Range Action	For Further Consideration
education. Parents, students, school administrators, business and labor leaders, and the general public must be made aware continually of the critical need to expand and improve vocational opportunities for youth and adults for both economic and social reasons. It is important that the Wilhite Public School District strengthen activities in public information about vocational education.	___	___	X
6. The staff should make a special effort to increase the participation of students in each area of vocational education in organizational activity programs related to their occupational preparation.	X	___	___
7. The necessary research should be done to develop graduation requirements reflecting achievement of competencies and which would describe the sequential development of job entry skills for the vocational specialties included in the school's instructional programs. The research would indicate what skills or competencies a student has acquired when he completes or leaves a particular course. This research is necessary to effect the articulation of courses and programs between the high schools and community colleges. Further, it is highly important in working with employers in the placement of students.	___	X	___
8. The district administration should strengthen inservice training programs, seminars,			

	Immediate Action	Long-Range Action	For Further Consideration
and workshops relating to teacher and supervisory education.	X	____	____
9. The district should initiate or expand programs for the handicapped, disadvantaged and special needs students, with a major financial expenditure for such supportive services as psychological and guidance and counseling, and specialized instruction.	____	____	X
10. More emphasis should be placed on building student work habits, attitudes, pride in craftsmanship, and quality of work.	____	____	X

Total Conclusions: 10

Immediate Action: 5

Long-Range Action: 2

For Further Consideration: 3

EXHIBIT C

Minutes of the Montgomery County
Advisory Committee for Vocational and Technical Education

The Montgomery County Advisory Committee for Vocational and Technical Education was called to order by Chairperson Mary Mays on June 29, 197_, at 7:00 p.m. at the Ramada Inn. All members were present.

The first item of business was passage of a Committee resolution expressing appreciation for the outstanding service rendered to the Council by Mr. John Allen, Mrs. Martha Buchannan, and Mr. John Scott. The resolution was read by Chairperson Mays and unanimously adopted by the full Committee. Terms of office for these members expire August 30, 1976. New members Mrs. Joan Bates, Mr. Martin Mead, and Vance Lacy were welcomed.

The second item of business was a concern expressed by Mrs. Buchannan that the Committee had not been receiving the district's annual plan for vocational education with sufficient time to review it while the plan was in the process of development. Other members shared this concern. No action was taken by Committee except to express their concern that they be involved early in the development of the Plan.

The third item of business was a tentative report from Chairperson Mays on the recommendations which the Committee will include in its fall report to the district Board of Education. Final action on these recommendations was delayed to the fall meeting.

The fourth item of business was to approve a plan of action for the coming year beginning September, 19__. A part of this plan was to commission and approve several studies. The first was to study the Committee and its activities with special emphasis on interfacing with other community agencies; the second, providing leadership for extending and expanding cooperative occupational programs in the community; and, third, an "image"

study of the Committee in the community.

The plan was presented by Chairperson Mays, and unanimous approval was given by the Committee.

The meeting adjourned at the regular time.

Respectfully submitted,

John Baxter

John Baxter, Secretary

EXHIBIT D

Montgomery County Schools
Division of Vocational Education

HORTICULTURE GOALS

The landscape gardener student must be able to:

1. Develop favorable attitudes toward the world of work.

2. Develop an understanding and an appreciation for the unique position of agriculture as it relates to the necessities of life: food, clothing, shelter, raw materials, beauty, survival and employment.

3. Discover occupational opportunities and educational requirements as they relate to employment in agriculture.

4. Demonstrate knowledge of the basic sciences which are necessary in the area of ornamental horticulture.

5. Demonstrate the skills necessary to function effectively and safely as a landscape gardener and in related areas.

HORTICULTURE

SPECIFIC BLOCK OBJECTIVES

BLOCK I - ORIENTATION

The student must be able to:

1. Demonstrate an understanding of the policies for conduct in the Agriculture Department by listing 80 percent of the guidelines given for student conduct.
2. Locate each work area in the classroom, shop and laboratory for use and informational purposes.
3. Identify ten roles of agriculture in the community, state and nation.
4. Pick out 25 occupations related to agriculture from the Dictionary of Occupational Titles.
5. Locate material on a specific subject from the reference material.
6. Find reference materials and develop a report from them.

BLOCK II - LEADERSHIP

The student must be able to:

1. Name five of the advantages and benefits of leadership ability.
2. Relate situations where leadership is needed and state four characteristics of a good leader.
3. List the duties and responsibilities of a group of newly formed officers.
4. Participate in receiving and disposing of a motion as a member and presiding officer.

BLOCK III - HORTICULTURAL MECHANICS

The student must be able to:

1. Explore job opportunity fields - name and discuss three with teacher.
2. Plan and build a birdhouse.
3. Select tools and materials to do simple repair of electrical wire.
4. Repair broken water pipe.
5. Give his/her opinion of arc and oxyacetylene welding as a career.
6. List tools and materials needed to build a storage concrete block house.
7. Paint the birdhouse, name tools and materials.
8. Name the parts of a two cycle engine and point out parts on a chart giving reasons for good service.
9. Discuss metal working as a source of employment.

BLOCK IV - PLANT SCIENCE

The student must be able to:

1. Group seventy-five percent of a given list of plants into annual, biennial, or perennial.

2. Draw major parts of plants and plant cells.
3. Describe the photosynthesis process.
4. Differentiate between food carrying and water carrying cells.
5. Draw stem cell and label parts.
6. Demonstrate movement of nutrients from roots to leaves of plants.
7. Describe how deciduous plants live when the leaves are off the tree.
8. Discuss the effect on plant growth of light, temperature, moisture, hormones, CO_2 and O_2, and levels of nutrient elements.
9. List common pests, diseases, and their symptoms (six of each) and give recommended controls.
10. List three reasons for forest fire laws and state the importance of preserving some plants in their area.

BLOCK V - ORNAMENTAL HORTICULTURE

The student must be able to:

1. Name and give sources of information for eight careers in ornamental horticulture.
2. Identify by name ten plants which grow in their area.
3. Organize a dish garden, terrarium, aquarium, corsage or flower arrangement.
4. Propagate plants from slips, roots, leaves, or seeds.
5. Discuss the three main areas of the landscape.
6. Demonstrate care for family house plants.
7. Select and grow the plants best suited for their area.
8. Identify and control diseases and insects of their home and school.
9. Name the most important functions and parts of the plant.
10. Name three lawn and turf grasses and interpret simple information.

BLOCK VI - MANAGEMENT

The student must be able to:

1. List four or more areas of employment in the community concerning agricultural management.
2. State what management does and what this brings about.
3. List problems and solve simple problems in the decision making process.

BLOCK VII - SOIL SCIENCE

The student must be able to:

1. Discuss the salary range and other incentives for basis to make valid occupational decisions.
2. Name the soil test best suited to agriculture.
3. Name the characteristics of garden topsoil and subsoil.

4. State the importance of organic matter to the garden plot.
5. Describe the importance of water to plant life.
6. Name major and minor plant food elements.
7. Recommend by name the fertilizers used to increase soil acidity or alkalinity.
8. List the amount of fertilizer element (N.P.K.) 4-6-8 in 100 pound bag.

BLOCK VIII - NATURAL AND HUMAN RESOURCES

The student must be able to:

1. Name or list natural resources and be able to define conservation.
2. Discuss the relationship of natural resources to human resources.
3. Name and explain five ways agriculture is affected by natural resources.
4. List six purposes of conservation. Name and describe ten occupations associated with conservation.
5. Explain basic principles of soil and water conservation. List the various requirements for employment in soil and water conservation.
6. Discuss the activities of various employees in game and fish management.
7. Participate in conservation practices. Discuss the various areas of employment in forest conservation.
8. Describe the job requirements of ten occupations in the area of rural recreation. Name and describe five recreational areas in the community.

BLOCK IX - ORIENTATION AND GUIDANCE IN ORNAMENTAL HORTICULTURE

The student must be able to:

1. State what will be expected as a student landscape gardener.
2. List five benefits derived from studying ornamental horticulture.
3. Discuss the job classification and scope of the ornamental horticulturist.
4. Understand the student's responsibility in each of the teaching methods and techniques used.
5. State five methods of student evaluation.
6. Demonstrate knowledge of school regulations and policies through daily conduct.
7. State the procedures for carrying out shop rules and policies.

BLOCK X - SAFETY IN THE SCHOOL AND ON THE JOB

The student must be able to:

1. Demonstrate the procedure to follow in reporting a fire and evacuating the building. Also, describe how to use an extinguisher and how to extinguish various kinds of fires.
2. State the physical dangers from breathing harmful fumes.
3. Discuss the two most common causes of electrical shock.
4. List the safety rules for operating each piece of shop equipment.
5. Describe the work clothes needed for the shop and on the job.

BLOCK XI - LANDSCAPING

The student must be able to:

1. Define and recognize good landscaping.
2. Demonstrate his or her ability to read simple blueprints.
3. Prepare maps of grounds including measurements.
4. Discuss the various landscape designs.
5. Draw planting plans of home grounds.

BLOCK XII - BOTANY

The student must be able to:

1. Identify fifty landscaping plants and discuss their growth habits.
2. Evidence an understanding of plant morphology and physiology.

BLOCK XIII - SOIL SCIENCE

The student must be able to:

1. Describe the two types of soil.
2. Discuss soil management.
3. Explain the importance of organic matter.
4. Demonstrate how to take a soil sample.
5. Discuss the various irrigation methods and the types of drainage.

BLOCK XIV - PROPAGATING PLANTS

The student must be able to:

1. Discuss the advantages and disadvantages of sexual propagation.
2. Discuss the advantages and disadvantages of asexual propagation.
3. List five factors that affect propagation.
4. Propagate ten kinds of plants.

BLOCK XV - TURF GRASSES

The student must be able to:

1. Identify four kinds of grasses.
2. Explain the importance of preparing good seedbed for grass.
3. Demonstrate how to plant a 10 x 10 plot.

BLOCK XVI - HOUSE PLANTS

The student must be able to:

1. Demonstrate the watering, fertilizing and general care of house plants.
2. List four types of growing media and three types of containers.
3. Demonstrate the correct procedure for potting a plant.

BLOCK XVII - NURSERY MANAGEMENT

The student must be able to:

1. Evidence understanding of the decision making process.
2. State five factors involved in deciding what to produce.
3. Explain the areas of organization involved in plant production.
4. Discuss the type of structures needed in nursery plant production.
5. Demonstrate knowledge of record keeping for successful nursery management.

OPTIONAL ACTIVITIES

Interview a person responsible for determining vocational program goals and objectives to learn about procedures for compiling and writing the needed material.

You may wish to write a memorandum to the chief instructional officer of the school district to report the identified needs for which program goals and objectives are to be developed.

or

Jot down your observations about vocational program needs indicated in the provided resource materials. These notes will be used for future reference in developing program goals and objectives.

The following questions check your comprehension of the material in the "Information Sheet," p. 19.

You are to answer the following five questions and give specific information pertinent for developing program goals and objectives from each of the sources provided (Exhibits A, B, C, and D). Note problems identified in the information sources for which program goals and objectives should be developed to promote desired program outcomes. Please explain fully, but briefly, and make sure you respond to all parts of each item.

Self-Check

1. Are specific problems identified? (If so, briefly state them.)

2. What broad implications, if any, does this information contain?

3. What immediate action should be taken?

4. What additional information would you seek or resources would you employ before taking action?

5. Who are the key personnel that would be involved?

Compare your written answers on the "Self-Check" with the model answers given below. Your responses need not exactly duplicate the model answers; however, you should have covered the same major points.

MODEL ANSWERS

Exhibit A. Community occupational survey findings

1. A serious imbalance exists between probable job placement opportunities and supply of program graduates in two of the three occupational groups reported in the chart. A severe shortage of qualified secretarial personnel is likely in 1978, coupled with a potentially disasterous oversupply of trained stenographers.
2. Since stenography is an element of a secretarial position, potential exists to upgrade stenography trainees to fulfill the more comprehensive requirements of secretarial work.
3. High ability stenography trainees can be screened and counseled for transfer into the secretarial training program. Additionally, a program can be initiated to recruit and "retread" experienced stenographers.
4. Community vocational advisory committee recommendations would be sought. Information on additional equipment needs should be compiled, and adequacy of present facilities in meeting needs of a modified program should be explored.
5. School administration, community vocational advisory committee for Business and Office Related Occupations, stenography instructors, and vocational guidance counselors.

Exhibit B. Recent final report from consultants

1. Several problems are identified which require immediate attention. Although all noted deficiencies should be attacked, problems noted as requiring immediate action should receive priority.
2. Students would profit directly by action on several of the noted deficiencies. These include job placement and follow-up, program articulation, increased activity of student vocational organizations, expansion of special needs programs and services, and increased emphasis on work habits and attitudes (2), (3), (6), (9), (10).
3. A data collection plan should be designed; job placement and follow-up should be initiated; school resources for support of the vocational advisory committee should be stressed; teachers' in-service education should be expanded, and stress should be placed on student vocational organizations (1), (2), (4), (6), (8).
4. Staff committees should be formed to explore the identified immediate and long range concerns, according to individual interests and needs.
5. School administration, vocational instructors, vocational advisory committee, the School Board.

Exhibit C. Community Vocational Advisory Committee minutes

1. The advisory committee minutes indicate that involvement of the advisory committee in annual vocational program planning may be incomplete.
2. Apparently, the advisory committee community image and involvement is of concern.
3. School personnel should begin annual planning earlier to allow sufficient input from the advisory council before the plan is finished.
4. Staff assistance should be afforded the advisory committee in conducting studies of the image and community interaction of the committee. The staff should explore available resources and additional public relations techniques which can be used to enhance the status of the advisory committee in the community.
5. Advisory committee members, vocational instructors, school administrators, and community civic leaders, and service professionals.

Exhibit D. A sample outline from a local school district

1. Goals should relate to course objectives and outline which each teacher follows.
2. Teamwork among administrators and instructors is needed in deriving goals and objectives to carry out the instructional program. The goals should be stated in a way that specific course objectives can be derived. The vocational instructors must be capable of analyzing an occupation into component instructional blocks relating to goals for students. Objectives must be delineated for each block to guide specific course content which allows student mastery of the goal(s) for each block of the occupation.
3. Program goals, occupational analyses for each program, and instructional objectives and course outlines for each program should be examined for alignment. If these various elements of the instructional program appear to lack coordination, necessary revisions should be made to align them.
4. Vocational program materials from several other comparable school settings might be examined. Program occupational advisory committees could appraise adaptability of such outside resources for the local vocational programs.
5. Key personnel would include vocational instructors for each training program and the occupational advisory committees for those programs.

LEVEL OF PERFORMANCE: Your completed "Self-Check" should have covered the same major points as the model answers. If you missed some points or have questions about any additional points you made, review the material in the "Information Sheet," pp. 6-19 or (if necessary) check with your resource person about completing additional optional activities.

LEARNING EXPERIENCE II

ENABLING OBJECTIVE
Demonstrate knowledge of educational standards for vocational school programs (i.e., Standards of Quality and State Plan for Vocational Education) and concerns for facilitaing development of goals and objectives for vocational programs.

Read — You will be reading the "Information Sheet," pp. 24-32.

Optional Activity — Compile your own list of major goals in one vocational service area. Discuss your list with instructors in the selected service area.

Feedback — You will be demonstrating knowledge of standards and concerns involved in facilitating development of goals for vocational programs by completing the "Self-Check," pp. 33-34.

You will be evaluating your knowledge by comparing your completed "Self-Check" with the "Model Answers," p. 35.

INFORMATION SHEET

EDUCATIONAL STANDARDS FOR VOCATIONAL SCHOOL PROGRAMS

A goal is a broad statement of purpose or direction. A formal goal statement should provide a reference point of generalized agreement among government officials of vocational and technical education, authorities in the field, the staff of the school system and its constituents--students, parents, and employers. Yet, an instructional goal should not be stated so broadly that specific objectives for instruction cannot be derived. It should be possible to specify two or more performance objectives, with conditions and criteria, that are contributory to the attainment of a major goal. An instructional goal is concerned with student performance rather than with the management of the vocational program.

Educational goals prepared by various professional groups serve a useful purpose when revising and updating program goals and objectives. Statements of major educational goals provide meaningful direction for vocational educators and, even though developed many years ago, are still considered useful today. (The Seven Cardinal Principles of Secondary Education goal statement has been widely adapted at the high school level (see p. 26) Twenty years after the Seven Cardinal Principles were stated, the Educational Policies Commission drafted a statement, Purposes of Education in American Democracy, to provide more specific direction to curriculum development. The Commission's goal statement is summarized on p. 26.

Also available for consideration by local program developers are goals and objectives identified for each vocational service area by the membership of professional associations. An example is shown on p. 27.

Information for developing program goals and objectives to meet state requirements for vocational and technical education is available for each state. Every state develops a state plan for vocational education annually, as mandated by the Vocational Education Amendments of 1968. These state plans typically include a section on goals for reference by local program developers (see example on p. 28). Additionally, many states enact "standards of quality and objectives for public schools" which give direction to the total educational efforts of state public school systems. Certain state educational standards may apply specifically to vocational and technical programs. An example is shown on p. 29 Additional sources of information about state goals for vocational and technical education are the state curriculum guides for each vocational service area (see examples pp. 30-32).

The resources described above provide relevant information for consideration in developing goals and objectives to support desired program outcomes for local vocational education programs. With such a foundation for goal development, you can cooperatively derive program goals which are valuable to all concerned.

EXHIBIT A

Seven Cardinal Principles[1]

1. To secure a command of the fundamental processes.
2. To develop good habits of citizenship.
3. To maintain good health and habits of safety.
4. To develop ideals for worthy home membership.
5. To develop a sense of ethical character.
6. To furnish a background for vocational efficiency.
7. To develop socially desirable leisure time activities.

Purposes of Education in American Democracy[2]

1. Self-realization
   A) Health, Recreation, Personal Philosophy of life, etc.
2. Human Relationships
   A) Home, Family, Community Life, etc.
3. Economic Efficiency
   A) Vocational and Consumer
4. Civic Responsibility
   A) Civic Responsibility through Good Citizenship.

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[1]Commission on Reorganization of Secondary Education, The Seven Cardinal Principles (Washington, D.C.: U.S. Bureau of Education, 1918).

[2]Educational Policies Commission, The Purposes of Education in American Democracy (Washington, D.C.: National Education Assoc., 1938), p. 41, cited by John U. Michaelis, et al., in New Designs for Elementary Curriculum and Instruction (New York: McGraw-Hill Book Co., 1975), pp. 70-72.

EXHIBIT B

Vocational Goals and Objectives Identified by a Professional Association[1]

Home Economics Education

Recently, a committee of the American Vocational Association clarified the emphases of home economics education, as follows:

1. Give greater consideration to economic, social, and cultural conditions and needs of all persons, including special groups such as teenage parents, older Americans, ethnic groups, physically and/or mentally handicapped, institutionalized individuals, and persons in economically depressed areas.

2. Prepare individuals for professional leadership.

3. Design programs to prepare males and females for combining the roles of homemaker and wage earner.

4. Include consumer education, management of resources, promotion of nutritional knowledge and food use, and parenthood education to meet the current societal needs.

5. Design programs for males and females who have entered, or are preparing to enter, the occupation of homemaking.

6. Provide for ancillary services, activities, and other means of ensuring quality in all consumer and homemaking education programs.

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[1]Bertha G. King, et al., "Position Paper: Home Economics Education," American Vocational Journal, February, 1976, p. 62.

EXHIBIT C

State Plan for Vocational Education
Goals[1]

Consistent with their abilities, interests, and educational needs:

(1) Youths and adults will acquire the skills and knowledge needed for initial and continuing employment or self-employment in occupations of their choice and for which there are employment opportunities.

(2) Youths and adults will acquire the competencies needed as consumers of goods and services, for home and family living, and for personal use.

(3) Youths and adults will become aware of employment or self-employment opportunities and requirements for use in making career choices and in determining their educational programs.

(4) Youths and adults will exhibit pride in work well done, confidence in ability to perform and to develop leadership abilities, responsible citizenship, and a realistic self-image in relation to work in their chosen vocation.

(5) Youths and adults will benefit from programs improved and expanded through ancillary activities.

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[1]Virginia State Plan for Vocational Education, 1975-76 (Richmond: Division of Vocational Education, State Department of Education, 1975), p. ii.

EXHIBIT D

Standards of Quality for Public Schools in Virginia[1]

Public education in Virginia seeks to aid each pupil, consistent with his abilities, interests, and educational needs, to:

1. To acquire competence in using the fundamental learning skills and to acquire basic knowledge needed for participation in today's society;

2. To acquire skills and knowledge needed for education beyond high school or for employment;

3. To develop attitudes and values that lead to responsible participation as a citizen of our republic;

4. To develop a positive and realistic self-image.

5. To appreciate beauty and to understand its contribution to daily life.

6. To develop personal habits for continuing physical and mental health.

A performance objective pertaining to preparation for work was enacted as follows:

"By June 1976 at least 90% of high school graduates not continuing formal education should have a job entry skill."

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[1]Standards of Quality and Objectives for Public Schools in Virginia, 1974-76 (Richmond: State Department of Education, 1974), p. i.

EXHIBIT E

The Purposes of Agricultural Education[1]

The major purpose of agricultural education is to prepare individuals for successful employment in agricultural occupations. In harmony with the cardinal principles of education, agricultural education contributes to the development of the individual by helping to prepare him for a useful life.

In keeping with the current trends, agricultural education has the following major objectives:

1. To develop agricultural competencies needed by individuals engaged in, or preparing to engage in agricultural production.

2. To develop competencies needed by individuals engaged in or preparing to engage in agricultural occupations other than production.

3. To develop an understanding of career opportunities in agriculture and of the preparation needed to enter and progress in agricultural occupations.

4. To develop the ability to secure satisfactory placement and to advance in an agricultural occupation through a program of continuing education.

5. To aid in developing those abilities in human relations required for success in agricultural occupations.

6. To aid in developing those abilities needed to exercise and follow effective leadership in fulfilling occupational, social, and civic responsibilities.

Specific Objectives

A good agricultural education program helps:

1. To provide experiences for students that will enable them to make intelligent career choices.

2. To provide basic education in agriculture for high school youth who plan to engage in some type of agricultural production.

3. To provide basic education for high school youth who will later go into agricultural business occupations requiring

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[1] A Planning Guide for Agricultural Education Programs in Virginia's Public Schools (Richmond: Agricultural Education Service, Division of Vocational Education, State Department of Education, 1969), pp. 5-6.

knowledge, skills, and abilities common to agriculture and industry.

4. To assist with the occupational and vocational guidance of high school youth.

5. To provide an opportunity for high school youth to develop the knowledge, skills, and abilities required in gaining proficiency in agricultural mechanics.

6. To provide preparatory educational programs for students interested in post-high school training in area schools, trade schools, colleges, and universities.

7. To develop responsibility, leadership, citizenship, and cooperation through the application of the life sciences and the social sciences.

8. To complement the broad educational objectives of the public school system by making practical applications of the academic subjects, particularly in science, mathematics and economics, as they relate to the problems of the agriculture student.

9. To give instruction in post-high school courses to youth and adults who need or desire training or retraining for full-time or part-time employment in agricultural production.

10. To give continuing post-high school training or retraining to workers employed in agricultural occupations who need to upgrade their present skills or learn new skills.

11. To provide meaningful educational experiences as they apply to the problems of youth, thereby encouraging students to stay in school.

EXHIBIT F

Goals for Consumer and Homemaking Education[1]

The nature and the content of consumer and homemaking education in Virginia are expressed in the statements which follow. The program:

1. Provides preparation for the vocation of homemaking for youth and adults of both sexes with varying backgrounds and abilities.

2. Contributes to homemaking abilities and the employability of youth and adults in the dual role of homemaker and wage earner.

3. Encourages interest in home economics related occupations and home economics careers.

4. Offers opportunity for students, after the recommended two years of the consumer and homemaking program, to elect specialized areas in home economics for concentrated study, according to interests and needs, or to enroll in occupational home economics.

5. Develops consumer competence in the use of family resources.

6. Develops competencies in intelligent consumer practices in the market place.

7. Gives increasing emphasis to social and cultural conditions as related to the vocation of homemaking.

8. Encourages students to use available community services which enhance family living and to stimulate interest in providing community services.

9. Enables students to recognize and appreciate contributions different cultures make to family living.

10. Helps students recognize the contributions of leisure activities to fostering individual development and enriching family living.

11. Furthers realization of the important role of families in the development of individuals.

12. Furthers physical, emotional, psychological, and aesthetic well-being of individuals and family members.

13. Assists students in reaching their potential as individuals, as family members, as citizens, and as persons engaged in the world of work.

14. Helps individuals consider and clarify own values in relation to

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[1]Guide for Consumer and Homemaking Education in Virginia Secondary Schools (Home Economics Education Service, Division of Vocational Education, State Department of Education, 1968), pp. v, 21.

Listed below are several statements. You are to distinguish among those that are appropriately stated for instructional goals in vocational education and those that are not. In the blanks to the left of each statement place and "X" in the YES column if it is an instructional goal for vocational education, or an "X" in the NO column if it is not. For each statement which is not a vocational goal, describe briefly the error which was made, using the space provided below each statement.

SELF-CHECK

YES	NO	
___	___	1. To utilize vocational education facilities and staff efficiently to the best overall educational advantage of students.
___	___	2. To identify any malfunctioning component in a standard superheterodyne radio receiver, using a screwdriver, a multimeter, and schematic drawing; 80% of the malfunctions must be correctly identified within 15 minutes.
___	___	3. To list career opportunities in horticulture and state the preparation needed to enter each of those careers.
___	___	4. To list the ways consumer spending affect business.
___	___	5. To transcribe stenographic notes with accuracy.
___	___	6. To progress and advance in a chosen career until retirement.
___	___	7. To prepare drawings of models with technical accuracy.

YES NO

___ ___ 8. To list tools, equipment, and instruments required for accomplishing specific types of repairs or service on jobs on which an airconditioning, heating, and refrigeration serviceperson might be called.

Using the following model answers, check your knowledge of standards and concerns for facilitating development of goals and objectives for vocational programs.

MODEL ANSWERS

YES	NO		
___	X	1.	This is a management goal rather than an instructional goal, and it is not student-centered.
___	X	2.	This is a performance objective rather than a goal, since goals do not refer to conditions and criteria or standards.
X	___	3.	This is an instructional goal.
X	___	4.	This is an instructional goal.
X	___	5.	This is an instructional goal.
___	X	6.	This is stated too broadly, and it would be difficult to specify measurable contributory objectives.
___	X	7.	This goal could just as easily be one of the goals for some course unrelated to vocational education.
X	___	8.	This is an instructional goal.

LEVEL OF PERFORMANCE: Your completed "Self-Check" should have covered the same major points as the model answers. If you missed some points or have questions about any additional points you made, review the material in the "Information Sheet," pp. 24-32, or (if necessary) check with your resource person.

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LEARNING EXPERIENCE III

ENABLING OBJECTIVE

In writing, explain strategies for involving staff in the development of goals and objectives. Take into account unique characteristics of sub-groups.

Read Read the following "Information Sheet," pp. 37-44.

Review Use the checklist on p. 45 to review the adequacy of Mr. Stanley's plan in Case Study A on pp. 37-44 for assisting his staff in refining goals and objectives for their vocational programs.

Optional Activity Develop the outline of steps for an alternative plan that Mr. Stanley could have employed.

Plan Revise the plan or strategies for assisting staff in refining goals and objectives in the setting described in Case Study B, pp. 43-44.

Feedback Use the checklist on p. 45 to evaluate the adequacy of your own plan.

INFORMATION SHEET

STRATEGIES FOR DEVELOPING PROGRAM GOALS AND OBJECTIVES

Periodically, when programs are added to the curriculum or courses are updated, goals and objectives must be developed or revised for vocational programs. When faced with this task, the local director should develop a systematic strategy for devising goals and objectives. The desired quality of work will be achieved to the extent that the strategies employed are systematically organized.

We have all often experienced the haphazard approach to doing something; this should be avoided whenever possible. Since it is hardly reasonable for vocational directors to be completely knowledgeable in all vocational program areas to develop adequate goals and objectives for each, they must by necessity utilize the expertise of the instructional staff in their respective fields.

Instructional staff usually resent being told at the last minute to update the goals and objectives and submit them the next day. The local director, therefore, includes in his/her strategy, among other things, respect for staff teaching loads; the opportunity for staff to give input to format and style; secretarial assistance; release time; preparation time; additional resources; work space, etc.

The purpose of this learning experience is to acquaint you with appropriate strategies for assisting your instructional staff in developing goals and objectives for vocational programs. You will be reviewing two case study situations in order to become familiarized with various strategies for developing program goals and objectives.

A - Case Study for Facilitating Development of Goals and Objectives for Vocational Programs

John Stanley was recently employed as the new Director for Vocational Education in Linn County. Linn County is an average-sized county with three high schools that have most of the average vocational programs represented in each school.

Dr. Smith, the young superintendent, is also new in Linn County. He likes John and employed him because, among other things, John has just completed his masters degree in vocational education and worked on a curriculum development project while in graduate school.

The school board expressed to Dr. Smith when they interviewed him that they felt the school curriculum was in need of updating. Dr. Smith assured them that, if he were hired, he would make updating the curriculum a number one priority.

One of the first tasks that Dr. Smith mentioned at his initial staff meeting, July 10, was that during the coming year all curriculum was to be updated with new goals and objectives, etc. He gave each person on his staff reasonable latitude as to how they were to go about updating their respective curricula. Dr. Smith did say, however, that all curricula had to be updated by the following June and that the new goals and objectives for all programs had to be in his office by January 15.

John Stanley couldn't wait to get started on the vocational education curriculum. It had been a long time since any changes had been made in Linn County, for the former director for vocational education had just retired after being there sixteen years.

Early in the summer John reviewed the existing goals and objectives for all of the vocational programs. There was no question in his mind that they all needed to be updated.

As the superintendent had suggested, the board allocated some money for curriculum development, and John set up a small vocational curriculum library in the county office library. He ordered a good number of new reference materials to supplement what was already available. He made sure that there was at least one copy of every text and reference book used in each vocational program and subject area in the reference library. John also asked each department chairperson to send him the name and publisher of any new books and reference materials that they would like to review.

Next, John ear-marked some money for consulting services and travel should anyone wish to visit other schools or programs. He also spoke to the assistant superintendent for instruction about substitute teacher money to obtain release time for teachers (including Friday afternoon release time and teacher work days). The assistant superintendent indicated that there would be teacher work days and perhaps rotating released time meetings about once a week for each program area to work on curriculum.

Mr. Stanley employed a part-time typist to be available starting September 1 to type the new curriculum as it developed. He also put another table in the county curriculum library near the vocational education reference materials.

Then, during the orientation days prior to the beginning of school, at the regular meeting of department chairpersons, Mr. Stanley inform[illegible] them of the curriculum updating task and what he had done thus far. During the meeting they discussed goals and objectives, formats, and reached

concensus on what the new format for all the vocational programs would be. Each department chairperson was assigned the task and given the due dates for the goals and objectives.

At the morning county-wide vocational education staff orientation meeting, Mr. Stanley made a presentation about this number one priority, announced the plan, and gave the due dates of October 30 for interim drafts of all goals and objectives and January 10 for all goals and objectives to be in his office in the proper format. Each department met that afternoon to appoint a curriculum development chairperson for the total department and to organize a division of labor for developing the new goals and objectives.

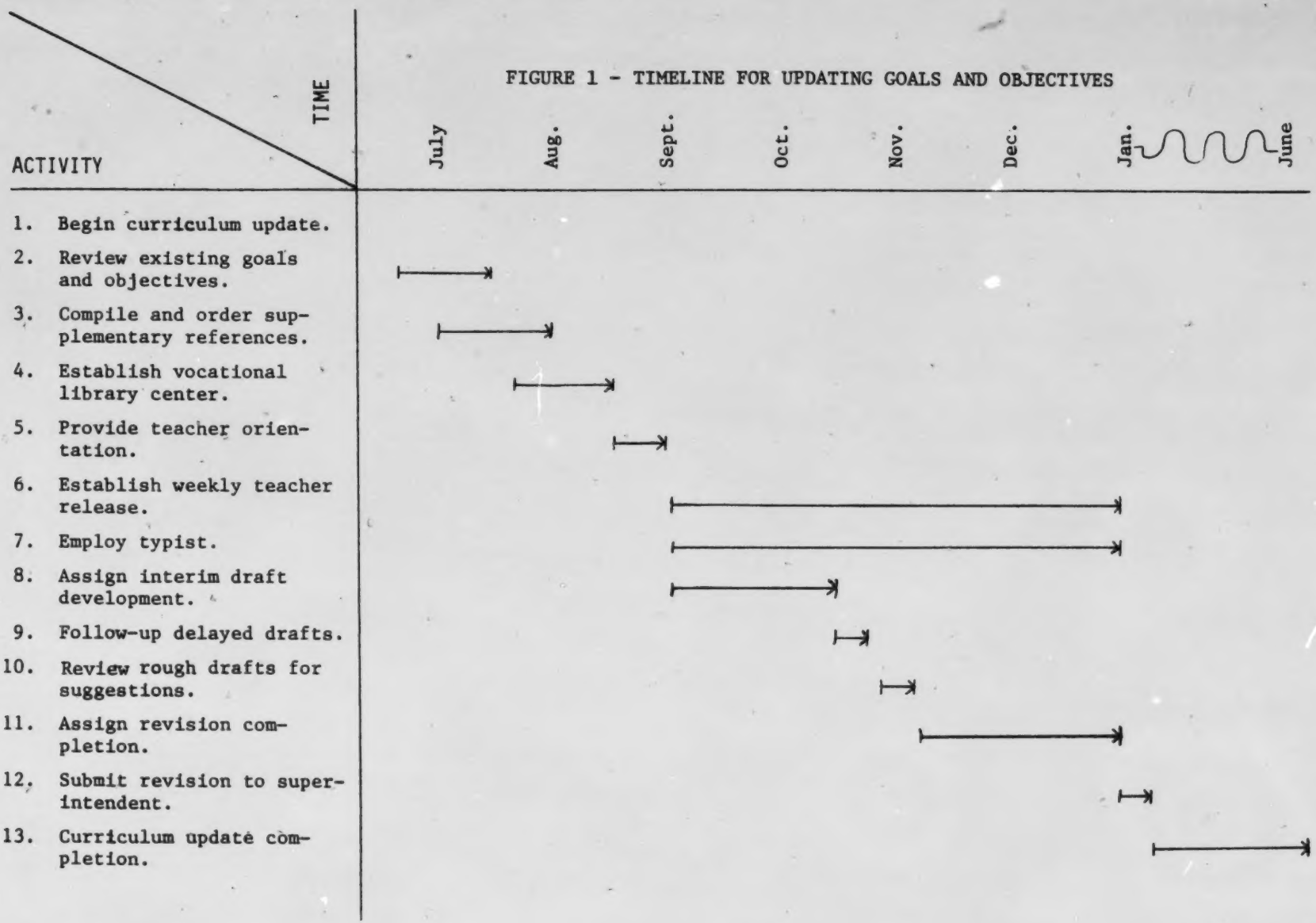
During the next four months each department met once every two weeks at the county curriculum library from 3:00-5:00 p.m. Release time was provided by use of a rotating substitute and sharing of loads among the teaching staffs throughout the schools.

By October 30, all departments except three had prepared a rough draft of the goals and objectives. Immediate follow-up by Mr. Stanley to the appropriate chairpersons brought the late drafts in by the following week.

During the next week, all John did was review the rough drafts and make suggestions for deletions and additions. He was able to get the goals and objectives with suggestions back to each department by November 15.

By January 10, Mr. Stanley had recieved all program goals and objectives in their final form except one department's, who turned theirs in January 12. As requested, John Stanley submitted a completed booklet of

FIGURE 1 - TIMELINE FOR UPDATING GOALS AND OBJECTIVES



goals and objectives for the vocational programs to the assistant superintendent in charge of instruction on January 14.

Optional Activity

You may wish to develop the outline of steps for an alternative plan that Mr. Stanley could have employed. This outline could include the additional resources which would be provided (i.e., release time, space, consultants travel, reference materials), the staff assignments to designated activities, and a time frame for curriculum revision.

You may then wish to compare your outlined plan with those of several of your peers, as well as brainstorm new ideas with them.

B - Case Study for Facilitating Development of Goals and Objectives for Vocational Programs

Mrs. Solomon was recently hired as the director of a vocational program for a county school district. She was informed of the recent priority to update all curriculum with relevant goals and objectives for the 16 vocational programs represented within the four high schools of the district.

The superintendent who established the priority expressed willingness to financially support the curriculum revision through release time, substitute teachers, instructional materials, travel, and consultant services.

After having the vocational instructional staff and craft committees make assessments as to the need for curriculum revision, Mrs. Solomon developed her plan for the updating task. Since there were four or more teachers in each of the vocational programs, Mrs. Solomon decided to employ one teacher from each program for four weeks during the summer to work on the curriculum update task.

Keeping in mind those she considered to be skillful writers, Mrs. Solomon selected teachers for the task. They were to have a rough draft completed by the end of the four weeks. Mrs. Solomon provided a work area in the district office for the 16 teachers. She also purchased reference materials and helped them compile materials they desired for the task. Since one of the business education teachers was interested in additional employment, he was employed to type during the four weeks.

At the beginning of school in the fall, each teacher was given a copy of the newly developed rough drafts and asked to make corrections, changes, and suggestions, and then meet in their respective vocational

program areas to develop the final drafts during the October and December faculty workdays.

Mrs. Solomon called for the final drafts in January in order to do a final editing and have the revised materials printed.

Plan Revise the plan described above for assisting staff in refining goals and objectives.

Use the following points relative to facilitating revision of goals and objectives to check your understanding. Circle the YES, ?, or NO column to indicate that each point was fully covered, partially covered, or not covered, respectively.

GOALS & OBJECTIVES FACILITATION CHECKLIST

Check as to whether the following were provided for:

1.	resource materials were made available	YES	?	NO
2.	consultant services were provided	YES	?	NO
3.	travel arrangements were made to visit other . . . . programs	YES	?	NO
		YES	?	NO
4.	release time was provided for development	YES	?	NO
5.	typing service was arranged	YES	?	NO
6.	sufficient workspace was provided for development .	YES	?	NO
7.	an agreeable format for goals and objectives was developed	YES	?	NO
8.	administrative responsibility was assigned for follow-through	YES	?	NO
9.	interim dates for intermediate drafts were established	YES	?	NO
10.	a contingency follow-up plan was developed in case of difficulties in meeting deadlines	YES	?	NO
11.	provision was made for explaining the planned revision to the staff	YES	?	NO
12.	strategies were described for involving staff in the revision planning	YES	?	NO
13.	deadlines for final drafts were specified	YES	?	NO

In the spaces provided below, comment on the strong points and the weak points of the described plan for revision of goals and objectives.

A. Strong points

B. Weak points

LEVEL OF PERFORMANCE: Items 1-13 must receive YES responses. If any item received a ? or NO response, revise your answers accordingly, or check with your resource person if necessary.

LEARNING EXPERIENCE IV

ENABLING OBJECTIVE

Determine whether goals and objectives meet State Department requirements for a program and identify any areas where goals and objectives appear deficient.

Read Read excerpts from the Virginia State Plan for Vocational Education concerning specific vocational programs in the "Information Sheet," pp. 47-54.

Optional Activity List sources for information on specific vocational program objectives.

Feedback Analyze a set of goals and objectives for specific vocational program to determine whether those goals and objectives meet State Department requirements for the program; identify any required areas where goals and objectives appear deficient. Evaluate your analytic ability by comparing your completed "Self-Check," p. 55, with the "Model Answers," p. 56.

INFORMATION SHEET

EXCERPTS FROM A STATE PLAN FOR VOCATIONAL EDUCATION

In each state's plan for vocational education are sections relevant to development of goals and objectives for local vocational programs. Included for your information in completing the "Self-Check" on p. 55 are excerpts from the Virginia State Plan for Vocational Education.

General goals of the state division of vocational education are shown on pp. 48-50. Of course, any program goals and objectives developed locally should be consistent with such general state goals. On p. 51 are the requirements of cooperative vocational education in Virginia. This section has definite implications for developing local goals and objectives for cooperative vocational education programs. Likewise, the section on required content of programs in consumer and homemaking education should be considered when developing local goals and objectives for that program area.

EXHIBIT A

REQUIRED CONTENT OF CONSUMER AND HOMEMAKING EDUCATION PROGRAMS[1]

Course offerings will:

(a) Devote particular attention to the improvement of conditions in economically depressed areas, taking into account social and cultural conditions and pressing needs to be met through consumer and homemaking programs.
(b) Prepare youth and adults who have entered, or who will enter, the work of the home to improve home environment and the quality of personal and family life.
(c) Give emphasis to becoming intelligent consumers in selection, use, and care of goods and services, budgeting, and consumer protection and responsibilities, as instruction is carried on in all areas of home and family living and in all years of the homemaking education program.
(d) Prepare youth and adults for the responsibilities of the dual role of homemaker-wage-earner, with particular emphasis on home management, child care and guidance, and human relationships (as applied to both family and employment situations), becoming intelligent consumers of goods and services, and meeting housing, nutrition, and clothing needs of the family.
(e) Include in all consumer and homemaking programs a concentration on becoming intelligent consumers of goods and services, and meeting housing, nutrition, and clothing needs of the family.
(f) Encourage preparation for professional leadership.

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[1] Virginia State Plan for Vocational Education, 1975-76 (Richmond, Virginia: Division of Vocational Education, State Department of Education, 1975), p. I-69.

EXHIBIT B

REQUIREMENTS OF COOPERATIVE VOCATIONAL EDUCATION PROGRAMS[1]

The State Board will approve a cooperative vocational education program only if it meets the following requirements:

PURPOSE

The program shall provide a cooperative work-study program of vocational education for persons who, through a cooperative arrangement between the school and employers, receive instruction, including required academic courses and related vocational instruction by the alternation of study in school with a job in any occupational field, but these two experiences must be planned and supervised by the school and employers so that each contributes to the student's education and to his employability. Work periods and school attendance may be on alternate half-days, full-days, weeks, or other periods of time in fulfilling the cooperative vocational education work-study program.

The program shall be designed for the purpose of providing only those on-the-job training opportunities that may not otherwise be available to persons who can benefil from such a program.

In allocating funds under Part G among local educational agencies first priority will be given to those geographic areas with high concentrations of youth employment and school dropouts.

Data in the State and Local Long Range Plan and Annual Plan will be used as criteria for determining geographic priorities and distribution of funds.

ON-THE-JOB TRAINING STANDARDS

The program shall provide on-the-job training that is related to existing career opportunities susceptible of promotion and advancement, does not displace other workers who perform such work and employs student-learners in conformity with Federal, State, and local laws and regulations and in a manner not resulting in exploitation of the student-learner for private gain.

For each student employed there shall be a written training agreement between the employer, the employee and the local educational agency which is signed by all three parties and which sets forth:

(a) Responsibilities and regulations to be followed by the employer.

(b) Length of employment period, work schedule, wages and on-the-job training plan to be followed by student and supervision student will receive from employer.

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[1]Ibid., pp. I-75- I-77.

(c) Responsibilities of student.

(d) Role of the local education agency representatives in supervising the employer and the employee and in handling disputes between employers and employees.

IDENTIFICATION OF JOBS

The following policies and procedures shall be followed in identifying jobs for which training is to be provided through the cooperative program to be established:

(a) Each local educational agency applying for funds under Part G of the Act shall show evidence of having appointed a local advisory committee for the program to be established. Such committee shall include representatives of employment agencies, labor groups, employers and other community agencies that would have a close relationship to the program being established.

(b) It shall be the responsibility of each local advisory committee for a cooperative program, working with the local educational agency, to perform such duties as identifying suitable jobs for persons who enroll in the program, establish criteria for selection such jobs, establish employment standards to be met by employer and employee and develop criteria for evaluating job performance.

EVALUATION AND FOLLOW-UP PROCEDURES [1]

Each local educational agency receiving funds under Part G shall submit a description of policies and procedures to be followed, selection and employment of program staff, duties of staff, provision for continuous supervision and evaluation of students while engaged in on-the-job training and provision for follow-up on on-the-job students who have participated in the program. A copy of each such evaluative follow-up study made shall be submitted to the State Director of vocational education annually.

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[1]Ibid., p. I-78

EXHIBIT C

Cooperative Vocational Education
Montgomery County Schools
Division of Vocational Education

GOALS AND OBJECTIVES

General:

1. To help the student develop a desire for efficiency in his/her chosen vocation.
2. To help the student develop individual responsibility for work done while on the job.
3. To instill in the student's mind proper work habits and their importance in serving the public.
4. To try to develop attitudes on the part of the student which will help to lead to a promotion in his/her chosen occupation.

Specific:

1. To acquaint the student with the etiquette and ethics found and used in business and industry.
2. To teach the student the importance of proper dress and good grooming which is required in the business and industrial world.
3. To instill within the student the proper work habits, knowledges, and skills which will lead to a proper employer-employee relationship.
4. To acquaint the student with the reports, bookkeeping, and other responsibilities required of the present day businessman or industrialist.
5. To acquaint the student with the necessary mathematics and English skills that are necessary to progress in his/her chosen field of work.

EXHIBIT D

Montgomery County Schools
Division of Vocational Education

FOOD SERVICE GOALS

The student must be able to:

1. Develop skills which contribute to employability.
2. Acquire grooming habits which contribute to employability.
3. Demonstrate proper procedures of presenting a check to the customer.
4. Recognize and apply principles of sanitation.
5. Recognize and apply safety principles.
6. Demonstrate career planning skills.
7. Demonstrate income management and budgeting skills.
8. Demonstrate correct procedures for care of food service establishment equipment and facilities.
9. Demonstrate correct food preparation procedures.

FOOD SERVICE OBJECTIVES

BLOCK I. ORIENTATION TO THE WORLD OF WORK

The student must be able to:

1. Apply for and receive a social security card.
2. Take three food service positions available through the want ads, list the qualifications desired in each, and in 25 words or less describe personal attributes which correspond to each.
3. List all labor laws which affect student workers in the food service industry. Responses must meet at least the 90% standard.
4. Fill out a job application which is rated satisfactory in regard to completeness, neatness, and legibility. It must meet at least the 90% standard on a class-developed checklist, as rated by a job sponsor.
5. Role play a job interview. Interview behavior must meet at least the 90% standard on a class-developed checklist, as rated by a panel of other students.

BLOCK II. GROOMING FOR THE JOB

The student must be able to:

1. Give a demonstrated presentation to the class on one of the following grooming tasks:
   1. Care of the teeth
   2. Care of the hair
   3. Care of hands and nails
   4. Use of makeup for the job
   5. Dress for work

   Presentation must meet at least the 90% standard on a class-developed checklist, as rated by a panel of other students.
2. Appear dressed and groomed as for the job, achieve at least the 90% standard as rated anonomously by other class members on a class-developed checklist.

BLOCK III. HOW TO SELL AND SERVE--EFFICIENTLY!

The student must be able to:

1. Make out and present a check in a role play situation. Behavior must meet at least the 90% standard as rated by a food service committee of class members on a committee-developed checklist.
2. Demonstrate understanding of the fundamentals of table service by meeting at least the 90% standard on a true-and-false item NRA achievement test.

BLOCK IV. SANITATION

The student must be able to:

1. Recognize the principles of sanitation which apply to the food service industry as evidenced by meeting at least the 90% standard on a true-and-false item NRA achievement test.
2. Demonstrate application of the principles of sanitation which apply to the food service industry in work at the training station, meeting at least the 90% standard as rated by the on-the-job training supervisor on a scorecard developed by the supervisor, the student, and the coordinator.

BLOCK V. FOR SAFETY'S SAKE

The student must be able to:

1. Recognize the principles of safety which relate to the handling and storage of food, equipment, and utensils, as evidenced by meeting at least the 90% standard on a true-and-false item NRA achievement test.
2. Demonstrate application of the safety principles which relate to the handling and storage of food, equipment, and utensils, as evidenced by meeting at least the 90% standard as rated by the training supervisor on a scorecard developed by the supervisor, the student, and the coordinator.

BLOCK VI. NOW, GO TO IT!

The student must be able to:

1. Diagram the food service career ladder, meeting the 90% standard.
2. Write a job description for each position on the career ladder which is available at own training station. Job descriptions should meet the 90% standard as rated by the job sponsor on a class-developed checklist.
3. List 5 institutions which offer further education and training in food service. Write for and place in class notebook a brochure describing the program of each.

BLOCK VII. MANAGING YOUR INCOME

The student must be able to:

1. List advantages and disadvantages of both the short and long income tax forms, meeting at least the 90% standard on a class-developed checklist.
2. Demonstrate a basic understanding of social security by meeting the 90% standard on a written objective test.
3. Outline in topic form each of the basic types of life, health, and auto insurance policies available, meeting at least the 90% standard on a class-developed checklist.
4. Outline in topic form each of the basic types of lending institutions and types of credit available, meeting at least the 90% standard on a class-developed checklist.

BLOCK VIII. CARE OF FOOD SERVICE ESTABLISHMENT EQUIPMENT AND FACILITIES

The student must be able to:

1. Demonstrate correct procedures for use of cleaning materials to clean utensils, equipment, and facilities, meeting at least the 90% standard as rated by the on-the-job training supervisor on a scorecard developed by the supervisor, the student, and the coordinator.
2. Demonstrate understanding of principles on which correct procedures are based by meeting at least the 90% standard on an objective test from the FOOD SERVICE Study Guide.

BLOCK IX. FOOD PREPARATION

The student must be able to:

1. Demonstrate correct procedures for preparation of foods in each category which are commonly prepared at food service establishments, meeting at least the 90% standard as rated by the on-the-job training supervisor on scorecards developed by the supervisor, the student, and the coordinator.
2. Demonstrate understanding of principles on which correct procedures are based by meeting at least the 90% standard on objective tests from the FOOD SERVICE Study Guide.

Using the set of goals and objectives provided for specific vocational programs and State Department guidelines for the program area, review the goals and objectives and complete the information requested below. Place an "X" in the appropriate blanks to the left of the numbers.

SELF-CHECK

Cooperative Vocational Education

____ A. Meets the minimum requirements of State Department guidelines.

____ B. Does not meet minimum requirements. Supply missing components.

1. General

   a.

   b.

2. Specific

   a.

   b.

3. Additional comments

   a.

   b.

Compare your written answers on the "Self-Check" with the model answers given below. Your responses need not exactly duplicate the model answers; however, you should have covered the same major points.

MODEL ANSWERS

I. Cooperative Vocational Education

____ A. Meets the minimum requirements of State Department guidelines.

__X__ B. Does not meet minimum requirements. Supply missing components.

1. General
   a. To enhance social skills and leadership abilities through participation in DECA.
   b. To help the student develop individual responsibility for work done while on the job, in accordance with the students' written training agreement with the employer and the school (see #2)
2. Specific
   a. To acquaint the student with the necessary mathematics and English skills that are necessary to progress in his chosen field of work and of the necessity to remain in school until graduation to fully develop relevant academic skills (see #5)
   b. To help the student obtain suitable jobs both for the training period and for placement after graduation through opportunities identified by members of an occupational advisory committee for the cooperative vocational program.
3. Additional comments
   a. This set of goals and objectives provide an adequate range of instructional activities specified in the State Plan. However, the objectives lack conditions and the criteria do not specify exact level of expected performance.
   b. The vocational instructor for this program area should be requested to insert definite conditions and criteria for expected student performance.

LEVEL OF PERFORMANCE: Your completed "Self-Check" should have covered the same major points as the model answers. If you missed some points or have questions about any additional points you made, review the material in the "Information Sheet," p. 47 , or (if necessary) check with your resource person.

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LEARNING EXPERIENCE V

ENABLING OBJECTIVE

Determine the alignment of goals and objectives revised in Learning Experience IV with local concerns compiled from a community occupational survey, advisory committee minutes, and a consultant's report. Include instructions for revision of the goals and objectives by the appropriate vocational teachers.

Read — Read the "Information Sheet," p. 58-64

Write — In a written memorandum, assess the alignment of goals and objectives with local constraints compiled from a related community occupational survey (p. 59), the relevant portion of a consultant's report (pp. 60-62), and minutes from an advisory committee meeting (pp. 63-64). This memorandum should include instructions for the revision of goals and objectives by appropriate vocational teachers.

Feedback — Compare the major points outlined in your memo with the checklist on p. 65.

INFORMATION SHEET

Remember that in periodic updating of goals and objectives, it is essential to identify needs to which the vocational program must respond. The vocational director must first identify outside resource materials which provide useful information about desired program outcomes. Included for your information are excerpts from a recent community survey pointing up needs for workers in various occupations. Review the survey report related to the set of goals and objectives you are analyzing (see p. 59). Additional outside resource materials for your information include minutes from an advisory committee meeting related to the program area you are analyzing (pp. 63-64), and the relevant portion of a consultant's report (pp. 60-62).

EXHIBIT A - REPORT OF COMMUNITY OCCUPATIONAL SURVEY
FOR MONTGOMERY COUNTY, 1976-80, SELECTED OCCUPATIONS

Montgomery County Job Opportunities 1976 to 1980

Occupational Category Food Service	Net demand from industry growth	Replacement needs from deaths and retirements	Total new jobs from these sources (3 years)	Approximate job openings for 1978 (Job Demand)
Fast Foods	420	375	795	389
Head Cook	760	420	1,180	520
Food Service Mgmt. Trainee	375	320	595	520

Montgomery County Estimated Labor Market Impact 1978

Occupational Category	Public High School	Community College	Adult Voc. Ed.	Private Post-secondary	Total 1978 (Program Supply)
Fast Foods	310	220	210	50	790
Head Cook	---	210	75	25	310
Food Service Mgmt. Trainee	---	310	105	37	452

Montgomery County Net Training Need

Occupational Category	Job Demand 1978	Program Supply 1978	Net Training Need 1978
Fast Foods	389	790	-401
Head Cook	520	310	210
Food Service Mgmt. Trainee	520	452	68

[1]Adapted from Greg Ohanneson and Glen Vaughan, "The Collection and Use of Vocational Program Information," American Vocational Journal, May 1975, p 37.

EXHIBIT B

RESEARCH ASSOCIATES

August 1, 197_

Mr. A. J. Hinkle, Director
Vocational and Technical Education
Montgomery County School District
Montgomery, Virginia 57821

Dear Mr. Hinkle:

This is to serve as a letter of transmittal of our research report entitled, "Current Vocational-Technical Training Needs of Montgomery County in Selected Occupations." This research project was undertaken by our organization as a result of contracts of agreement with Montgomery County School District. As you will note in the attached summary for Cooperative Office Occupations, each major conclusion of our study is listed with accompanying notation as to whether the recommendation should receive (1) immediate action, (2) long-range action, or (3) further consideration. Data on which to base these judgments were obtained from State Department of Education Statistical Reports, questionnaire studies involving local employers, and follow-up telephone interviews with program graduates. I believe the accompanying table presenting the results of this study is self-explanatory.

I would like to thank you for this opportunity to be of service to vocational education in Montgomery County.

Very truly yours,

Marvin E. Fink

Marvin E. Fink
Research Director

MF:db

EXHIBIT B (continued)

COOPERATIVE OFFICE EDUCATION
SUMMARY TABLE

	Immediate Action	Long-Range Action	For Further Consideration
1. A follow-up study should be conducted of one- and four-year graduates.	X		
2. More emphasis should be placed on building student work habits, attitudes, pride in skill development, and quality of work.			X
3. The coordinator should make a special effort to increase student participation in organizations related to COE, such as Future Business Leaders of America.			X
4. A data collection plan to serve current and recurring needs should be established for purposes of planning and evaluation.			X
5. Instructional requirements should be developed to reflect achievement of competencies for job entry skills in the cooperative office occupational cluster. Competencies forming the basis for instruction should be derived from an occupational analysis, verified by the local office occupations advisory committee.		X	
6. The community advisory council on cooperative Office Occupations should be expanded to include program graduates who are now employed in a variety of local offices.			X

Total Conclusions: 6

Immediate Action: 1

Long-Range Action: 1

For Further Consideration: 4

EXHIBIT C

Minutes of the Montgomery County
Advisory Committee for Cooperative Office Education

The Montgomery County Advisory Committee for Cooperative Office Education was called to order by Chairperson Rhonda Falls on July 25, 197_, at 7:00 p.m. at the Ramada Inn. Seven members were present.

The first item of business was a statement by Dr. Wayne Roberts, pediatrician, that COE graduates he hired had to receive extensive on-the-job training before they could assume all the routine clerical duties in a doctor's office. He felt that training experience in a courthouse or public utility office was inadequate for specialized clerical work. Mrs. Marge Williams, a legal secretary, concurred that they had the same problems in their office. Mr. Bill Babcock, the COE coordinator, said that most students had been placed in work stations at the courthouse, public utilities, and banks because those employers had been most agreeable in meeting training program requirements in the past. He asked Dr. Roberts and Mrs. Williams if their offices would be willing to assume responsibility for training several COE students every year. Each said they would consider it and report back. Chairperson Falls appointed both of them to a subcommittee along with members Mr. Adrian West, Mrs. May Johnson, and Mr. Richard Wentworth, who represent current COE work stations. This subcommittee is to study the clerical needs of local offices and report back any suggestions for relocating training stations.

The second item of business was a concern reported by Mr. Mark Mitzner regarding the sacrifice of quality to quantity in work produced by COE students in his insurance office. He asked Mr. Babcock to clarify the training emphasis of the COE program. Mr. Babcock replied that he did

require students to keep daily logs of the quantity of work they produced and of the variety of clerical duties they performed at their training stations. He stated he had not considered this requirement to interfere with the quality of students' work. Mr. Mitzner said that students failed to take time to check correct word spellings, proofread typed copy, and to make satisfactory corrections. Other members shared this concern. Mr. Babcock agreed this problem should be corrected and requested that a subcommittee be appointed to review the current curriculum materials for suggestions to incorporate a focus on student accuracy and quality of work. Mr. Mitzner accepted chairmanship of the subcommittee, and three other members were appointed to it by Chairperson Falls.

The third item of business was a report by Chairperson Falls on the outlined plan of action for the coming year, beginning September. A general vote of agreement was obtained on the outlined plan, and Chairperson Falls appointed two volunteers to write a tentative plan following the outline. Final action on the written plan was delayed until the August meeting.

The meeting adjourned at the regular time.

Respectfully submitted,

Ray Johns

Ray Johns, Secretary

Check your memorandum using the following points relative to revising goals and objectives in relation to local concerns. Circle YES, ?, or NO to indicate that each point was fully covered, partially covered, or not covered, respectively.

CHECKLIST FOR GOALS AND OBJECTIVES REVISION

I. Revisions relative to the following points are noted in the memorandum:

A. emphasis of curriculum materials to alleviate training deficiencies	YES	?	NO
B. needs for training station sites	YES	?	NO
C. identification of specific competencies necessary for successful entry into the occupation	YES	?	NO
D. training emphasis for various occupational levels within the occupational cluster	YES	?	NO

II. The following activities of participants connected with the vocational program are discussed:

A. teacher activities			
1. coordination of data collection to enhance articulation between labor supply and demand	YES	?	NO
2. conducting follow-up studies	YES	?	NO
3. utilization of occupational analyses in student competency development	YES	?	NO
B. advisory committee member activities			
1. representative participation according to types of local work establishments	YES	?	NO
2. active participation by all who agree to serve as members	YES	?	NO
C. student activities			
1. participation in program-related organizations (e.g., FHA-HERO, FBLA)	YES	?	NO
2. work habits and quality of work	YES	?	NO

LEVEL OF PERFORMANCE: All items must receive YES responses. If any item received a ? or NO response, revise your answers accordingly, or check with your resource person, if necessary.

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LEARNING EXPERIENCE VI

ENABLING OBJECTIVE

Analyze appropriate kinds of criterion measures to be used by staff in evaluating achievement of given sets of program goals and instructional objectives.

Read

Read the "Information Sheet," p. 67-81.

Optional Activities

A. List the various vocational programs in your school and the types of criterion measures currently used in each program.

and

Write an evaluation concerning the adequacy of measurement by each instrument or strategy of feedback in assessing stated goals and objectives for each respective program.

B. Discuss with your peers those available measuring devices which are recommended for various vocational programs.

Feedback

Select measuring devices for two or more vocational program areas and compare their relation to sets of goals and objectives stated for these programs.

INFORMATION SHEET

Vocational program goals and objectives have little value unless criterion-referenced measures are used to assess their attainment by students. A notable weakness in current vocational instruction is lack of continuity between stated goals and objectives and those devices used to measure student achievement. If a systematic instructional approach is to be implemented and accountability is to be assured, student achievement of the stated goals and objectives must be directly measured.

Each vocational program must use some form of post- or terminal assessment to determine whether or not the desired end results have been attained. In using various strategies to assess student achievement in vocational programs, several points must be considered.

First, the instruments and strategies for feedback which are used must directly relate to specified goals and objectives. Second, the criterion measures must coincide with what is important or relevant to be learned. In vocational education this implies more than merely "armchair" test composition. Rather, skills and knowledges being measured must be those which are needed for successful employment within a given occupational area. Priorities for developing criterion measures should be based on current occupational analyses which have been verified by community occupational surveys and vocational program advisory committees. Third, the instruments and criterion measures being used should be, where possible, objective in nature, and the measurement characteristics (i.e., content validity and reliability) should be apparent and present at acceptable levels. Of course, supplementary teacher-made measuring devices meeting less exacting standards are also appropriate.

Several types of instruments appropriate to vocational education are available. In a number of vocational program areas, standardized tests are used for licensing and certification. In such instances the stated goals and objectives should parallel what is expected for the student to be successful in completing such programs. Instruction, hopefully, will not be developed to "teach to the test."

In many cases the occupation has strong dictates that can be represented through program advisory committees. Appropriately, the advisory committees would be used extensively in developing and approving performance assessment for such programs. The advisory committees should even be instrumental in monitoring performance of those students nearing completion of a program. For example, union representatives may aid in student evaluation.

In certain states extensive effort has been put forth to develop standardized tests to be used throughout the state for various occupational programs. Where they exist, every effort should be made to develop goals and objectives that adequately represent such terminal assessments. Tests for some vocational areas are also distributed nationally (see pp. 75-81 for descriptions and selected examples).

Where state boards or state tests or occupational dictates do not exist, it is desirable that the instructors of such occupational programs cooperatively determine instructional content and then develop agreed-upon terminal performance tests that directly relate to program goals and objectives.

In summary, the important point to remember is that goals and objectives should be statements of what is to be achieved in the program. Therefore, criterion measures must be compiled or developed that accurately measure student achievement of goals and objectives.

EXHIBIT A

PERFORMANCE TEST FOR AUTO MECHANICS[1]

Test Item Bank

Each of the test events for the automobile mechanics curriculum area is written in one-to-one correspondence with the synthesized objectives (except for those objectives which currently do not fit the testing design). These test events are described in the following format: (1) TEST ITEM--the task to be done; (2) UNIT SECTION--piece of test equipment on which the item is to be administered; (3) ACTUAL TASK--describes interactions which are to occur between tester and testee; (4) TIME--estimate of time required to complete the test task; (5) SCORING--detailed criteria to be observed by the classroom teacher; (6) RECORD--description of camera angles from which the completed task should be photographed for central scoring; and (7) RECORD SCORING--criteria instructions for the central scorer.

An excerpt from the automobile mechanics test item bank is presented in the following pages.

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[1]Jim C. Fortune, Final Report, Evaluation Service Center for Occupational Education, Appendix I: Performance Test for Auto Mechanics (Amherst, Massachusetts: School of Education, University of Massachusetts, Amherst, 1972), pp. 11, 12, 22, 26, 35, 58. This is one of four tests published as separate appendices to the Final Report of the Evaluation Service Center for Occupational Education, Center for Occupational Education, School of Education, University of Massachusetts, Amherst, Massachusetts, June 1972.

There are a total of 47 performance items on this test. Included for your examination are six of these items. The other areas for which tests were developed include machine shop, woodworking, and electronics.

BLOCK 01 Power Train
UNIT 01 Engine

TEST ITEM:	Test cylinder compression, wet and dry.
UNIT SECTION:	Engine on chassis/stand.
ACTUAL TASK:	Both dry and wet cylinder tests must be performed, readings recorded.
TIME:	1 hour.
SCORING:	Instructor inspects 1) To see that all safety precautions are observed. 2) To see that readings are recorded correctly for dry test. 3) To see that wet test is performed correctly. 4) To see that readings are recorded correctly for wet test.
RECORD:	View of recorded test readings.
RECORD SCORING:	Recorded readings indicate compression tests, both wet and dry.

BLOCK 02 Fuel and Exhaust
UNIT 02 Fuel Delivery

TEST ITEM:	Replace fuel pump.
UNIT SECTION:	Engine on chassis/stand.
ACTUAL TASK:	Color-coded part must be installed to replace opposite color-coded part.
TIME:	1 hour.
SCORING:	Instructor inspects 1) To see that all safety precautions are observed. 2) To see that new pump is installed correctly and that all fittings are tightened properly. 3) For any fuel leaks. 4) To see that engine runs properly.
RECORD:	View of new pump showing all bolts and connections.
RECORD SCORING:	Color-coded part has been correctly installed.

BLOCK 03 Electrical
UNIT 01 Ignition

TEST ITEM:	Remove, gap, and replace spark plugs.
UNIT SECTION:	Engine on chassis/stand.
ACTUAL TASK:	Color-coded parts must be installed to replace opposite color-coded parts.
TIME:	Dependent upon engine type (1965-70 Chevrolet V-8: 1-2 hours).
SCORING:	Instructor inspects 1) Plug gaps. 2) Tightness of installed plugs. 3) Correct location of wires. 4) To see that engine operates smoothly.
RECORD:	1) View of plugs showing position of wires. 2) View of oscilloscope screen.
RECORD SCORING:	Color-coded parts have been correctly installed. Oscilloscope screen shows normal spike lines.

BLOCK 04 Chassis and Body
UNIT 01 Front Suspension

TEST ITEM:	Replace front end stabilizer links.
UNIT SECTION:	Test chassis.
ACTUAL TASK:	Color-coded part must be installed to replace opposite color-coded part.
TIME:	1 hour.
SCORING:	Instructor inspects 1) To see that safe jacking procedures are used. 2) To see that all parts are installed correctly.
RECORD:	Front view showing all parts of stabilizer links.
RECORD SCORING:	Color-coded part has been correctly installed.

BLOCK 05 Basic Equipment and Tools
UNIT 01 Jacking

TEST ITEM: Support vehicle on jack stand.

UNIT SECTION: Test chassis.

ACTUAL TASK: Chassis must be lifted and supported correctly on four jack stands.

TIME: 1/2 hour.

SCORING: Instructor inspects
1) To see that vehicle is lifted by correct jacking points.
2) To see that jack stands are positioned correctly under both front and rear of chassis.
3) To see that vehicle is positioned correctly and safely on jack stands.

RECORD:
1) View of front jack stands from under chassis.
2) View of rear jack stands from under chassis.

RECORD SCORING: Jack stands are in correct position.

EXHIBIT B - Descriptions of Selected Nationally Available, Standardized Tests for Vocational Education

Title: Test for Automotive Mechanic [1]

This test measures the extent to which candidates possess knowledge about the repair and maintenance of automobiles and trucks, at the level of the fully skilled, master mechanic, fully capable of repairing all the systems of automotive vehicles. The test can also be used to test journeymen mechanics. Eight subtests, containing a total of 100 knowledge type, multiple choice questions, include the following:

- Electrical systems
- Motor
- Tune-up
- Carburetor
- Front end and steering
- Rear end
- Transmission
- Brakes

Title: Cooperative Industrial Arts Tests: General Industrial Arts, Form A [2]

The General Industrial Arts Test is a part of the Cooperative Industrial Arts Test Series produced by Educational Testing Service. These achievement tests were designed for students who have had at least one year of exposure to general industrial arts. The General Industrial Arts Tests measure technical knowledge and skill and problem-solving ability in: general industrial arts, industrial practices, woodworking, metalworking, drawing, and electricity/electronics. The test items attempt to measure student ability to answer knowledge, comprehension, and application questions in the six areas previously mentioned. Classification of the items of the General Industrial Arts Test, Form A, can be seen in Table 4.

There are two forms of the test, Forms A and B, produced by ETS. Each test consists of fifty four-option multiple choice

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[1] An inspection copy of this test is available fro McCann Associates, 2755 Philmont Avenue, Huntington Valley, PA 19006.

[2] Cooperative Industrial Arts Tests, General Industrial Arts, Form A (Princeton, NJ: Educational Testing Service, 1979), pp. 2-7.

questions, and is designed to be administered within a thirty-five minute time limit.[1]

The other tests in the series are intended for use at the end of one-semester introductory programs in each of the subject fields.

Title: National Occupational Competency Examinations[2]

The National Occupational Competency Testing Institute is a nonprofit educational corporation, organized in June 1973, which provides high quality occupational competency examinations to the vocational education community. Currently, there are forty-four states participating in the program as a Consortium of States, governed by a Board of Trustees.

The examinations consist of two parts - Written and Performance. The written tests cover factual knowledge, technical information, understanding of principles and problem solving abilities related to the occupation. The performance tests are designed to sample the manipulative skills required by an occupation. Thus they enable the candidates to demonstrate possession of knowledge and skills that a competent craftsman employs in daily work.

A network of 36 area test centers has been established throughout the United States. Tests are generally conducted twice a year at these centers, as well as other locations, depending on need.

NOCTI tests are available in 24 separate occupational areas, as follows:

Air Conditioning & Refrigeration
Airframe & Power Plant
Architectural Drafting
Auto Body Repair
Auto Mechanic
Cabinet Making & Millwork
Carpentry
Civil Technology
Cosmetology

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[1]William E. Dugger, Jr., "A Study of the Comparison of the Achievement of Industrial Arts Curriculum Project Students with Traditional Industrial Arts Students" (unpublished PhD dissertation, The Ohio State University, 1970), pp. 43-44.

[2]Further information is available from National Occupational Competency Testing Institute, 35 Colvin Avenue, NY 12206.

Diesel Engine Repair
Electrical Installation
Electronics Communications
Industrial Electrician
Industrial Electronics
Machine Drafting
Machine Trades
Masonry
Mechanical Technology
Plumbing
Printing
Quantity Food Preparation
Sheet Metal
Small Engine Repair
Welding

EXHIBIT C - A Comprehensive Listing of Nationally Available Tests in Occupational Education

A Directory of Achievement Tests for Occupational Education provides a comprehensive listing of available occupational achievement tests. A one-page description given for each test "... includes information about authorship; date of publication; time required for administration; number of forms available; content coverage; source from which test may be obtained; cost of booklets and specimen sets; and type of scoring available."[1]

A partial listing of the tests described in this publication includes the following:

ACCOUNTING
- The College Accounting Testing Program Achievement Test, Level I
- The College Accounting Testing Program Achievement Test, Level II

NURSING AIDE
- Test Reservoir for Aide Instructors in Nursing (TRAIN)
- Testing the Aid's Skills with Children (TASC)
- Tool for Evaluating Abilities and Competencies of Home Health Aides (TEACH)

AIR CONDITIONING
- Achievement Test for Air Conditioning, Heating, and Refrigeration
- Refrigeration, Heating, and Air Conditioning

AUTO MECHANICS
- Achievement Test for Automotive Mechanics
- Auto Body (Ohio Trade and Industrial Education Tests)
- Auto Mechanics
- Auto Mechanics Trade Competency Examination
- Automotive Mechanics (Ohio Trade and Industrial Education Test)
- Examination in Automotive Mechanics
- Short Occupational Knowledge Test for Auto Mechanics
- Troubleshooting Trainer-Tester Device for Six Cylinder Valve-in-Head Engine (GMC Type 302)

BANKING
- Money and Banking

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[1]Joseph L. Boyd, Jr. and Benjamin Shimberg, Directory of Achievement Tests for Occupational Education (Princeton, NJ: Educational Testing Service, 1971), pp. 154-161.

BOOKKEEPING
- Bookkeeping
- Bookkeeping Achievement Test (First Semester)
- Bookkeeping Achievement Test (First Year)
- Bookkeeping (Minnesota High School Achievement Examinations)
- Bookkeeping Test (National Business Entrance Tests)
- Russell-Sanders Bookkeeping Test
- Short Occupational Knowledge Test for Bookkeepers
- Twentieth Century Bookkeeping and Accounting: Advanced Course Bookkeeping Tests
- Twentieth Century Bookkeeping and Accounting: Bookkeeping Tests (First Year)

GENERAL BUSINESS
- Business Fundamentals and General Information Test (National Business Entrance Tests)
- Business Law
- General Business
- General Business Achievement Test

CARPENTRY
- Carpentry Trade Competency Examination
- Examination in Carpentry
- Purdue Trade Information Test in Carpentry
- Short Occupational Knowledge Test for Carpenters

CLERICAL
- General Office Clerical Test (Including Filing) (National Business Entrance Tests)
- Study of Clerical Skills

COSMETOLOGY
- Cosmetology (Ohio Trade and Industrial Education Tests)

DATA PROCESSING
- Achievement Test for Data Processing Technology - Business
- Achievement Test for Data Processing Technology - Scientific
- Computers and Data Processing

DIESEL MECHANICS
- Heavy Equipment and Diesel Trades

DRAFTING
- Drafting Trade Competency Examination
- Examination in Architectural Drafting and Building Construction
- General Drafting: A Comprehensive Examination
- Mechanical Drafting (Ohio Trade and Industrial Education Tests)
- Short Occupational Knowledge Test for Draftsmen

ELECTRICAL FIELD
- Achievement Test for Electrical Installation and Maintenance (Industrial Electricity)
- Basic Electricity (Ohio Trade and Industrial Education Tests)
- Electrical Sophistication Test

ELECTRICAL FIELD, Continued
- Electricity Electronics Competency Examination
- Electricity-Electronics, Cooperative Industrial Arts Tests
- Examination in Industrial Electricity and Electronics
- Examination in Technical Electricity and Electronics
- Short Occupational Knowledge Test for Electricians

ELECTRONICS
- Achievement Test for Electronics Technology
- Basic Electronics (Ohio Trade and Industrial Education Tests)
- Electronics
- Troubleshooting Trainer-Tester Device for the Basic Positioning Servo System (Electronics)
- Troubleshooting Trainer-Tester Device for the Basic Radar System (Electronics)
- Troubleshooting Trainer-Tester Device for the Black and White Television Receiver (RCA-ACS78) (Electronics)
- Troubleshooting Trainer-Tester Device for Electronic Circuits
- Troubleshooting Trainer-Tester Device for the Push-Pull Amplifier (Electronics)
- Troubleshooting Trainer-Tester Device for the Super-heterodyne Receiver (Electronics)
- Troubleshooting Trainer-Tester Device for the Three-Stage Transmitter (Electronics)

MACHINE SHOP
- Achievement Test for Machinists
- Can You Read a Scale?
- Examination in Machine Shop Practices
- Machine Trade Competency Examination
- Machine Trades (Ohio Trade and Industrial Education Tests)
- Purdue Trade Information Test in Engine Lathe Operations
- Short Occupational Knowledge Test for Machinists

MECHANICAL DEISGN
- Examination in Mechanical Design and Construction

METAL WORK
- General Metals
- Metals (Cooperative Industrial Arts Tests)
- Purdue Trade Information Test for Sheet Metal Workers
- Sheet Metal (Ohio Trade and Industrial Education Tests)

PHOTOGRAPHY
- Modern Photography Comprehension Test

PLUMBING
- Short Occupational Knowledge Test for Plumbers

PRINTING
- Printing (Ohio Trade and Industrial Education Tests)
- Printing Trade Competency Examination

REFRIGERATION
- Achievement Test for Air Conditioning, Heating, and Refrigeration
- Refrigeration, Heating, and Air Conditioning

SHORTHAND
- Commercial Education Survey Tests: Junior Shorthand
- Commercial Education Survey Tests: Senior Shorthand
- PRI Test of Shorthand Skills
- Shorthand Test

TOOL
- Short Occupational Knowledge Test for Tool and Die Makers

WELDING
- Purdue Trade Information Test in Welding (Revised Edition)
- Short Occupational Knowledge Test for Welders
- Welding Trade Competency Examination

Optional Activities

A. List the various vocational programs in your school and the types of criterion measures currently used in each program.

and

Write an evaluation concerning the adequacy of measurement by each instrument or strategy of feedback in assessing the stated goals and objectives for each respective program.

Check the accuracy of your written evaluation by conferring with the chief instructional officer in your school or with your resource person.

B. Discuss with your peers those available measuring devices which are recommended for various vocational programs.

COMPARING GOALS AND OBJECTIVES

IN RELATION TO MEASURING DEVICES

You are to write an analysis of appropriate kinds of criterion measures to be used by staff in evaluating achievement of program goals and instructional objectives.

Choose sets of goals and objectives for at least two vocational program areas and two measuring devices corresponding to those program areas. If you wish, choose from the variety of goals and objectives within this module and the measuring devices presented on pp. 91-103. Or, you may select goals and objectives from two or more vocational areas and measuring devices corresponding to those program areas which are currently used in your own school.

You will then compare the direct relation of each selected set of goals and objectives to the measuring device corresponding to each set.

Your written analysis will be reviewed by your resource person.

LEVEL OF PERFORMANCE: If your resource person finds deficiencies exist relating to your written analysis, review this learning experience and revise your outlined plan as necessary.

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MODULE ASSESSMENT*

TERMINAL OBJECTIVE

Facilitate the development of program goals, instructional objectives, and criterion measures for vocational education programs.

Write Devise written strategies for developing updated program goals and instructional objectives in view of current concerns. Use the case study setting on pp. 85-94, or relate to the specific instructional programs in your school or district.

Feedback Your total competence will be assessed by your resource person.

*You may choose to complete this assessment without completing the first six learning experiences if you think you have the proficiency to do so.

CASE STUDY

Vocational Director
Jefferson County School District

You are the vocational director in a comprehensive school district for a county in Virginia. The school district has a large vocational program and serves a rather densely populated suburban area. You located here in your present position a year ago. After reviewing the curriculum and observing it in action, you are ready to make changes. Your highest priority is to update the program goals and instructional objectives in view of current State Department of Education guidelines and local labor market conditions. Also, in anticipation of the curriculum revision, you hired a consultant team six months earlier. They recently submitted a final recommendation, which will be considered.

You have the full backing of your superintendent, Dr. Marie Simmons. Dr. Simmons directed you to review the current program and then submit written plans for change within two years.

In your written plans for facilitating the revision of program goals and instructional objectives, include the following:

1. Describe resources you would make available to the faculty and provisions for release time for the revision activities.

2. Write memoranda to two of the three vocational supervisors who would be involved in the initial stages of curriculum revision. The memos should contain instructions for working with their staffs to update the sets of goals and objectives on file for their program areas (see materials on pp. 87-89, 91). In the memos you are to specify current state educational standards they must consider, along with pertinent local concerns pointed up in survey reports and consultant studies from your files (see informational materials on pp. 86, 90, 92-94).

3. Include at least two sample criterion measures and/or feedback strategies which would be appropriate for instructors in those vocational areas to use in assessing student achievement of the revised goals and objectives.

4. Diagram a timeline for revision activities.

EXHIBIT A - REPORT OF COMMUNITY OCCUPATIONAL SURVEY FOR JEFFERSON COUNTY, 1976-80, SELECTED OCCUPATIONS[1]

Jefferson County Job Opportunities 1976 to 1980

Occupational Category Drafting	Net demand from industry growth	Replacement needs from deaths and retirements	Total new jobs from these sources (3 years)	Approximate job openings for 1978 (Job Demand)
Machine Drafting	2,760	2,870	5,630	1,815
Architectural Drafting	110	162	272	160
General Drafting	1,565	---	1,565	600

Jefferson County Estimated Labor Market Impact 1978

Occupational Category	Public High School	Community College	Adult Voc. Ed.	Private Post-secondary	Total 1978 (Program Supply)
Machine Drafting	585	620	115	---	1,320
Architectural Drafting	---	85	27	20	132
General Drafting	---	75	50	984	1,109

Jefferson County Net Training Need

Occupational Category	Job Demand Demand 1978	Program Supply 1978	Net Training Need 1978
Machine Drafting	1,815	1,320	495
Architectural Drafting	160	132	28
General Drafting	600	1,109	-509

[1]Adapted from Greg Ohanneson and Glen Vaughan, "The Collection and Use of Vocational Program Information," American Vocational Journal, May 1975, p. 37.

EXHIBIT B

Jefferson County Schools
Division of Vocational Education

GENERAL DRAFTING GOALS

1. To develop and direct the student's shop activities along lines parallel to present-day drafting practices.
2. To develop the student's judgment, conception, and initiative and direct them along lines best suited to him.
3. To instill in the student's mind the idea that there are definite work objectives to be reached, and that these objectives must be obtained through hard work, accuracy, and reliability.
4. To develop individual responsibility for work done in office practice.
5. To create a desire for advancement in the student's chosen vocation, by introducing and keeping before him achievements of leading engineers, architects, and designers.

GENERAL DRAFTING OBJECTIVES

1. To teach the student the basic requirements for the drafting trade, mechanical, architectural, and marine.
2. To enable the student to more intelligently choose the branch of drafting for which he is most suited.
3. To teach the skills and manipulative practices of the mechanical, architectural, and marine drafting trades.
4. To teach the importance of cleanliness, orderliness, and accuracy when working on the drafting board.

EXHIBIT C

Jefferson County Schools
Division of Vocational Education

MACHINE DRAFTING GOALS

1. To direct the student's activities along lines parallel to present-day practices in machine drafting.

2. To help the student develop judgment and initiative, and to direct him toward goals best suited to his temperament and abilities.

3. To instill in the student the idea that there are definite work objectives to be reached and that these objectives must be obtained through effort, accuracy, and determination.

4. To teach the student the importance of assuming the responsibility for his drawings.

5. To create a desire for advancement in the student's chosen vocation by introducing and keeping before him achievements of leading machine designers, engineers, and draftsmen.

MACHINE DRAFTING OBJECTIVES

1. To teach the student the basic principles of machine drafting skills.

2. To enable the student to more intelligently choose the phase of machine drafting for which he is most suited.

3. To teach the skills and manipulative practices of the machine drafting trade.

4. To teach the necessity of accuracy, cleanliness, and orderliness when working on the drafting board.

EXHIBIT D

Jefferson County Schools
Division of Vocational Education

ARCHITECTURAL DRAFTING GOALS

1. To direct the student's activities along lines parallel to present-day practices in drafting.

2. To help the student develop judgment and initiative and direct him along lines best suited to his temperament and abilities.

3. To instill in the student's mind the idea that there are definite work objectives to be reached and that these objectives must be obtained through effort, accuracy, and determination.

4. To teach the student the importance of assuming responsibility for work done in the shop.

5. To create a desire for advancement in the student's chosen vocation, by introducing and keeping before him achievements of leading engineers, architects, and designers.

ARCHITECTURAL DRAFTING OBJECTIVES

1. To teach the student the basic principles of drafting skills.

2. To enable the student to more intelligently choose the field of drafting for which he is most suited.

3. To teach the skills and manipulative practices of the architect's trade.

4. To teach the necessity for accuracy, cleanliness, and orderliness when working on the drafting board.

EXHIBIT E - REPORT OF COMMUNITY OCCUPATIONAL SURVEY
FOR JEFFERSON COUNTY, 1976-80, SELECTED OCCUPATIONS[1]

Jefferson County Job Opportunities 1975 to 1980

Occupational Category Health	Net demand from industry growth	Replacement needs from deaths and retirements	Total new jobs from these sources (3 years)	Approximate job openings for 1978 (Job Demand)
Nursing Assistant	457	320	777	295
Emergency Medical Technician	160	40	200	87
X-ray Technician	37	10	47	42

Jefferson County Estimated Labor Market Impact 1978

Occupational Category	Public High School	Community College	Adult Voc. Ed.	Private Post-secondary	Total 1978 (Program Supply)
Nursing Assistant	28	41	15	---	84
Emergency Medical Technician	8	32	27	10	77
X-ray Technician	89	15	---	37	141

Jefferson County Net Training Need

Occupational Category	Job Demand 1978	Program Supply 1978	Net Training Need 1978
Nursing Assistant	295	84	211
Emergency Medical Technician	87	77	10
X-ray Technician	42	141	-99

[1]Adapted from Greg Ohanneson and Glen Vaughan, "The Collection and Use of Vocational Information," American Vocational Journal, May 1975, p. 37.

EXHIBIT F

Jefferson County Schools
Division of Vocational Education

L.P.N.

A graduate of this practical nursing program must be able to:

1. Demonstrate interpersonal relationships acceptable to nursing.
2. Recognize education as a continuing process, and learning as an individual process.
3. Recognize and apply practices to maintain optimum health.
4. Recognize responsibility as an active participant in community organizations.
5. Display an understanding of the role of community health organizations and their relation to society.
6. Demonstrate a knowledge of factors which determine the planning and modification of nursing care designed to meet the patient's needs.
7. Demonstrate the basic nursing skills needed to function efficiently within the dual role of the practical nurse.
8. Display an understanding of the practical nurse's dual role as a vital member of the health team.

EXHIBIT G

RESEARCH ASSOCIATES

May 15, 197_

Director of Vocational and Technical Education
Jefferson County School District
Jefferson City, Virginia 65201

Dear Director:

This is to serve as a letter of transmittal of our research report entitled, "Current Vocational-Technical Training Needs of Jefferson County." This research project was undertaken by our organization as a result of contracts of agreement with Jefferson County School District. As you will note in the attached summary, each major conclusion of our study is listed with accompanying notation as to whether the recommendation should receive (1) immediate action, (2) long-range action, or (3) further consideration. Data to make these judgments were obtained from State Department of Education statistical reports; questionnaire studies involving local employers and citizens; open meetings with students, teachers, and parents; and structured interviews with school district administrators and State Department supervisors for this region.

I believe the accompanying table presenting the results of our study is self-explanatory. Thank you for this opportunity to be of service to vocational education in Jefferson County.

Very truly yours,

Marvin E. Fink

Marvin E. Fink
Research Director

MF:sg

EXHIBIT H

SUMMARY TABLE

Conclusions:	Immediate Action	Long-Range Action	For Further Consideration
1. The staff should make a special effort to increase student participation in all vocational service areas in the organizational activity programs related to their occupational preparation.	X	____	____
2. A data collection plan to serve current and recurrent needs should be established for purposes of planning and evaluation.	____	X	____
3. Articulation of programs between the junior high and high school, between the vocational and academic high school programs, and between the high school and post-secondary institutions should be researched and improved to enable more students to increase their job breadth and depth as they move from one level of formal schooling to another.	____	X	____
4. The necessary research should be done to develop graduation requirements reflecting achievement of competencies and which would describe the sequential development of job entry skills for the vocational specialties included in the school's instructional programs. The research would indicate what skills or competencies a student has acquired when he/she completes or leaves a particular course. This research is necessary to effect the			

	Immediate Action	Long-Range Action	For Further Consideration
articulation of courses and programs between the high schools and community colleges. Further, it is highly important in working with employers in the placement of students.	___	___	X
5. A job placement and follow-up service should be established for purposes of planning and evaluation.	X	___	
6. More emphasis should be placed on building student work habits, attitudes, pride in craftsmanship, and quality of work.	X	___	___
7. The district should initiate or expand programs for the handicapped, disadvantaged, and special needs students, with a major financial expenditure for such supportive services as psychological and guidance and couseling, and specialized instruction.	___	___	X

Total Conclusions: 7

Immediate Action: 3

Long-Range Action: 2

For Further Consideration: 2

Rate the students' performance in each of the following phases of facilitating development of goals and objectives. Circle the YES, ?, or NO column to indicate that each point was fully covered, partially covered, or not covered, respectively.

FACILITATION OF GOALS AND OBJECTIVES
ASSESSMENT FORM

The written plans include the following:

I.	Resources			
	A. space for review of informational materials is described	YES	?	NO
	B. provisions are made for teacher release time . .	YES	?	NO
II.	Memoranda			
	A. staff involvement activities are specified . . .	YES	?	NO
	B. pertinent state educational standards are identified	YES	?	NO
	C. specific local concerns are identified	YES	?	NO
III.	Criterion measures and/or feedback strategies			
	A. at least two appropriate measures or feedback strategies directly relating to the respective goals and objectives are identified	YES	?	NO
	B. a copy of each instrument or strategy is included or is described fully	YES	?	NO
IV.	Time line			
	A. the time line is inclusive of the period of time needed for such revision activities	YES	?	NO
	B. the list of activities is comprehensive and complete	YES	?	NO
	C. the sequence is logical, with sufficient time allocated for each activity	YES	?	NO

LEVEL OF PERFORMANCE: All items must receive YES responses. If any item received a ? or NO response, discuss this with your resource person and, if necessary, the learning experience, or part of it, must be repeated.

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